

WHAT IS CLAIMED IS:

1. A system for desalinating and purifying seawater to become drinkable water and devices for the system, the system and the devices comprising:

a bottom layer having

a heating unit with a base comprising a heating chamber with a bottom and an inner wall made of thermal-conductive and anti-corrosive material, a heater accommodated inside the heating chamber, an impurity depositing area defined in the bottom of the heating chamber, an impurity outlet communicating with the impurity depositing area inside the heating chamber, a water inlet communicating with the heating chamber, an waste water outlet communicating with the heating chamber above the impurity depositing area, and a steam pipe attached to the heating chamber, wherein the heater is connected to the base of the heating unit and adapted to receive thermal energy from an outside heating device;

a middle layer having

a desalinating cracking unit mounted over the heating unit to generate steam and comprising a dividing plate made of thermal-conductive and anti-corrosive material and attached to a bottom of the middle layer, a dissociating reducing device secured over the dividing plate, an impurity depositing area on the dividing plate, a waste water outlet communicating to the impurity depositing area, a steam chamber surrounding the dividing plate and the dissociating reducing device, and a water inlet with a water-level monitoring panel attached to the steam chamber;

a top layer having

a purifying distilling unit communicated with the desalinating cracking

unit and comprising a distilling tower with multiple distilling layers, multiple ventilating holes defined in each of the multiple distilling layers, and a steam chamber constructed below the distilling tower; and
an outer cooling assembly connected to the top layer and having
a cooling unit comprising a condensing chamber, a gas pipe connected between the distilling tower and the condensing chamber, a helically heat-exchanging tube connected below to the condensing chamber;
wherein, the bottom layer, the middle layer, and the top layer are separable;
wherein, the desalinating cracking unit and the purifying distilling unit communicate with each other to achieve a cyclically purifying process so that the seawater is repeatedly desalinated, purified and reformed by cracking processes in the dissociating device and by repeatedly purifying processes in the distilling tower to generate the drinkable water.

2. The system and the devices as claimed in claim 1, wherein the heater in the heating unit comprises multiple stainless steel tubes evenly arranged in a circle and a cone-shaped cap mounted on the multiple stainless steel tubes.

3. The system and the devices as claimed in claim 1, wherein at least one gas outlet respectively attached to the heater in the heating unit.

4. The system and the devices as claimed in claim 1, wherein the water inlet in the heating unit connects to a pre-treating filtering device.

5. The system and the devices as claimed in claim 1, wherein the water inlet in the heating unit is extending to the sea to conduct the seawater to the heating chamber.

6. The system and the devices as claimed in claim 1, wherein the water inlet in the heating unit connects to a detergent supplier to input detergent to clean the system.

1 7. The system and the devices as claimed in claim 6, wherein the detergent is
2 nontoxic citric acid.

3 8. The system and the devices as claimed in claim 4, wherein pre-treating
4 filtering device filter the seawater to remove particles from the seawater,

5 9. The system and the devices as claimed in claim 1, wherein the water inlet in
6 the desalinating cracking unit connects to a pre-treating filtering device.

7 10. The system and the devices as claimed in claim 4, wherein the water inlet in
8 the desalinating cracking unit is extending to the sea to conduct the seawater to the
9 heating chamber.

10 11. The system and the devices as claimed in claim 1, wherein the water inlet in
11 the desalinating cracking unit connects to a detergent supplier to input detergent to clean
12 the system.

13 12. The system and the devices as claimed in claim 1, wherein the water inlet in
14 the heating unit is controlled by an automatically controlling system to control quantity
15 of the seawater and to automatically supply the seawater.

16 13. The system and the devices as claimed in claim 1, wherein the dividing plate
17 is shaped into an annular concave disk.

18 14. The system and the devices as claimed in claim 1, wherein the dividing plate
19 has the multiple steam holes defined through the dividing plate.

20 15. The system and the devices as claimed in claim 1, wherein the dissociating
21 reducing device in the desalinating cracking unit is flushed by the steam to vibrate to
22 crack elements within water molecules of the steam.

23 16. The system and the devices as claimed in claim 1, wherein the dissociating
24 reducing device in the desalinating cracking unit is made of stainless steel.

1 17. The system and the devices as claimed in claim 1, wherein the dissociating
2 reducing device in the desalinating cracking unit is round-shaped.

3 18. The system and the devices as claimed in claim 1, wherein the dissociating
4 reducing device in the desalinating cracking unit is made for a boiler.

5 19. The system and the devices as claimed in claim 1, wherein the dissociating
6 reducing device in the desalinating cracking unit is constructed in a singular layer.

7 20. The system and the devices as claimed in claim 1, wherein the dissociating
8 reducing device in the desalinating cracking unit has multiple manifold pipes.

9 21. The system and the devices as claimed in claim 1, wherein the dissociating
10 reducing device in the desalinating cracking unit is clamped by a top plate and a bottom
11 plate, both the top plate and the bottom plate are made of stainless steel.

12 22. The system and the devices as claimed in claim 21, wherein multiple round
13 holes are respectively defined on the bottom plate and the top plate.

14 23. The system and the devices as claimed in claim 1, wherein each of the
15 multiple distilling layers in the distilling tower is made of stainless steel.

16 24. The system and the devices as claimed in claim 1, wherein each of the
17 multiple distilling layers in the distilling tower is dome-shaped.

18 25. The system and the devices as claimed in claim 1, wherein the condensing
19 chamber in the cooling unit has at least one condensing device accommodated inside the
20 condensing chamber.

21 26. The system and the devices as claimed in claim 25, wherein a cold water
22 chamber surrounds the at least one condensing device.

23 27. The system and the devices as claimed in claim 26, wherein the cold water
24 chamber has a top and a water inlet attaches to the cold water chamber near the top.

1 28. The system and the devices as claimed in claim 26, wherein the cold water
2 chamber has a bottom and a water outlet attaches to the cold water chamber near the
3 bottom.

4 29. The system and the devices as claimed in claim 1, wherein the top layer and
5 the middle layer are hermetically engaged by means of engaging rings.

6 30. The system and the devices as claimed in claim 26, wherein the bottom layer
7 and the middle layer are hermetically by clamping the dividing plate therebetween.

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